

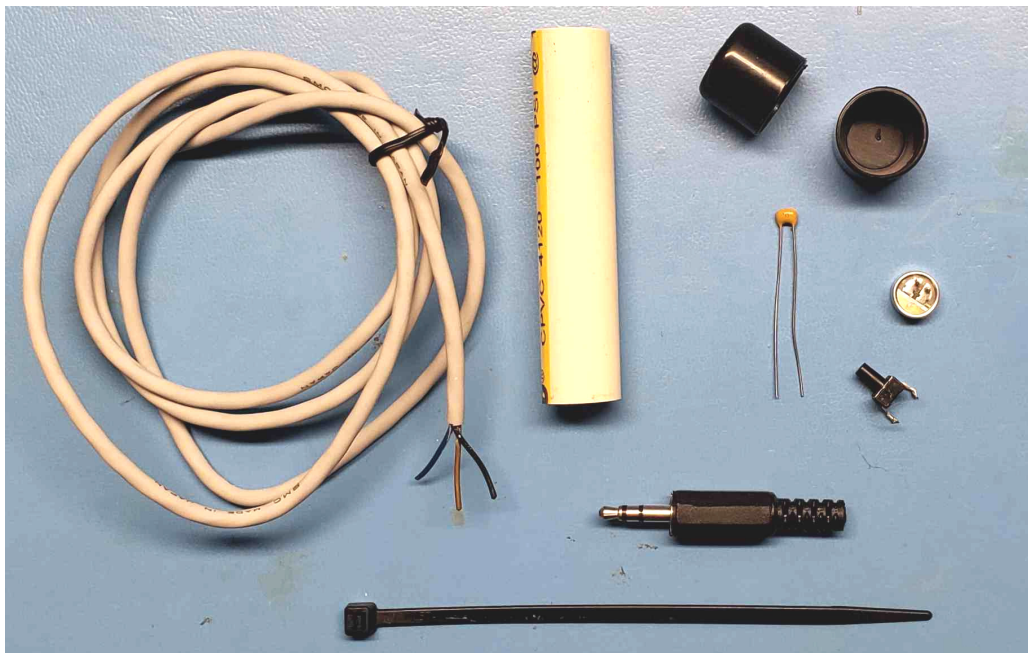
## Inexpensive Homemade Electret PTT Microphone



You can easily fabricate an electret PTT microphone with common household tools.

What you will need:

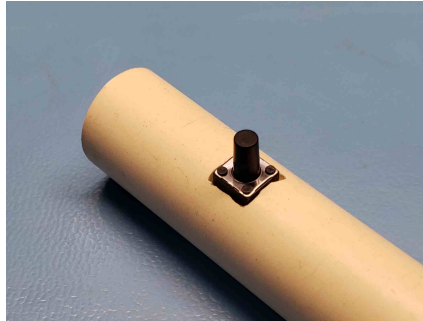
- 1 - 1/2" CPVC tube 3" long
- 2 - 5/8" vinyl caps, or Ace Hardware 5/8" Leg Tips #56927
- 1 - tactile N.O. pushbutton switch, Tayda #A-5128, or similar
- 1 - small electret microphone element, Mouser # 665-AOM4546PR, or similar
- 1 - 1nF mono cap (.001uF)
- 2'-3' - 3 conductor flexible cable, or 3' stereo jumper, one connector removed
- 1 - 3.5mm stereo plug
- 1 - 1/8" plastic tyrap



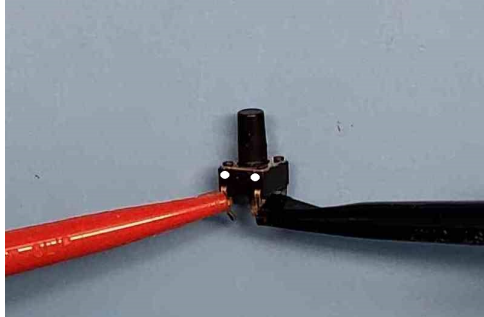
1. Drill a 1/4" diameter hole thru one wall of the 3" long CPVC tube, 1" from the end.



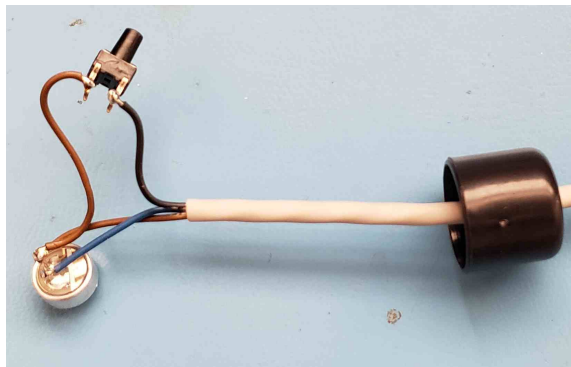
2. Square up the hole with an Xacto knife so the N.O. switch just can pass thru the hole. It will be epoxied in place eventually.



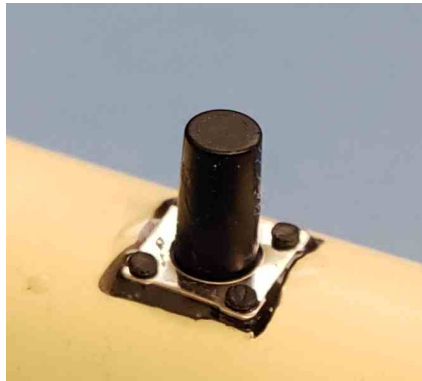
3. With your VOM, check to see which of the four pins of the switch are switched, and mark them.



4. Wire according to the schematic, and double check the wiring before you epoxy the switch in place. The electret element is polarity sensitive. Use the manufacturers drawing for determining the polarity. If unknown, the pin that has continuity with the outer case is usually (-).



5. Slide the assembly into the tube, and let the switch post come thru the squared hole and epoxy in place. Let the epoxy harden. Be careful not to get any epoxy surrounding the switch post.



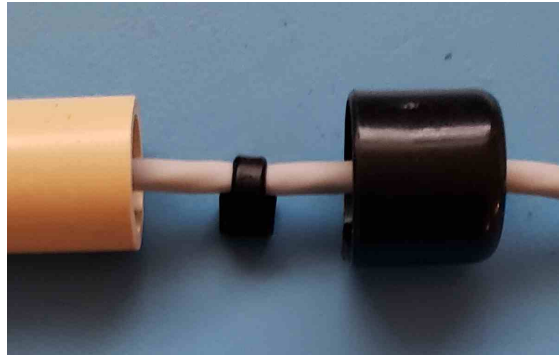
6. Push the microphone into the end of the tube so the face of the microphone is about 3/16" inside the tube and epoxy (X-X) in place. Let the epoxy harden.



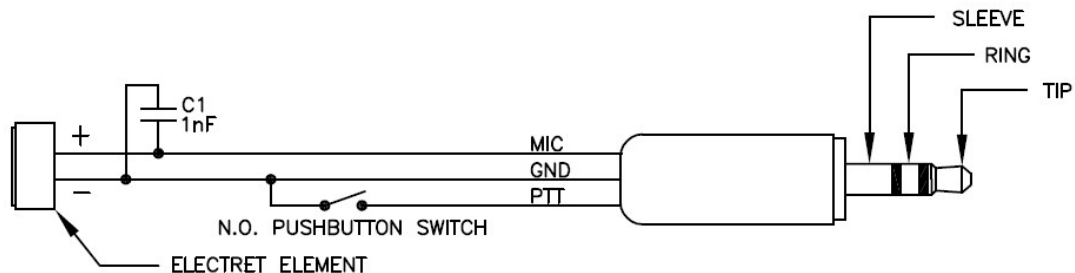
7. With your soldering iron, make a hole in the center of one vinyl cap about 1/4" in diameter for the microphone end. In the other cap make a hole of a diameter that will just allow the three conductor cable to just pass through.



8. Install the cap with the 1/4" hole on the microphone end. Pass the microphone cable thru the inside of the other cap. Tighten the 1/8" Tyrap on the inside of the cap to act as a strain relief for the cord and install the other vinyl cap.



9. Wire the 3.5mm stereo plug sleeve, ring, and tip, according to your circuit requirements.



As you can see from this suggested project there are many alternatives. You can improvise from the parts you have available in your junk box. The tube diameter will be dependent on the size of the internal components you find. Electret elements and pushbutton switches are available in many devices that are frequently discarded. The 3 conductor cord can be a stereo jumper with one end cut off. And, with the advent of 3D printing, packaging possibilities are endless. Just maintain the correct plug lead orientation for your transceiver and the polarity of the microphone. Electret microphones require some biasing. It is assumed the biasing has been accounted for in your circuit if it requires an electret (condenser) microphone.

If you cannot find vinyl caps, Ace Hardware has a package of four 5/8" I.D. plastic leg tips #56927 that are a slip fit. They are a little more rigid than the vinyl caps and need to be glued to the CPVC tube to be held in place. They were used in this example. Best to use a silicone sealer so it can be removed if any service is required.